

State Agency Energy Information Bulletin

Information for
Agency Energy Managers
and FASER Users at
Virginia State Agencies

Welcome!

This is the first issue of the *State Agency Energy Information Bulletin*, published by the Department of Mines, Minerals and Energy (DMME). This bulletin will provide Agency Energy Managers with useful energy efficiency information, and will update users of the **FASER** software (Fast Accounting System for Energy Reporting) on important issues concerning the State Agency Energy Monitoring Program. We also want this bulletin to become a forum for agencies to share ideas on reducing energy costs, and on ways they have learned to streamline the energy monitoring process. Send us your questions or comments, and tell us about your energy reduction projects for inclusion in future issues of this bulletin. For more information, contact Ken Jurman at (804) 692-3222 or email: ksj@bsg1.mme1.state.va.us. ❖

Energy Monitoring Program Review

There have been many changes of personnel assigned to manage the energy monitoring efforts at state agencies since the Energy Monitoring Program began. In fact, over thirty percent of the current FASER users assumed this role after the original training workshops in 1993. For the benefit of these newer FASER users, this first *Energy Information Bulletin* will focus mainly on the State Energy Monitoring Program. The following sections review the intent and organization of this program.

The Importance of Energy Monitoring

Energy Monitoring enables agencies which operate state-owned facilities to systematically track, report and, most importantly, analyze the energy consumption trends of those facilities. Monitoring energy use trends makes it possible to target buildings and energy using systems which consume excessive energy. By giving agencies the tools for determining how their building energy is being used, decisions on how to reduce energy expenditures can be made.

Energy monitoring is one of the most important meth-

ods available to agencies to measure the success of their Agency Energy Management Plans, and for the Commonwealth to document the overall success of the many energy management initiatives taking place within state facilities. The State Energy Monitoring program will provide the central source of energy cost, consumption and reduction data for Virginia state facilities.

Organization of FASER Users

To standardize the data reporting program, FASER data files have been set up for most participating state agencies by DMME and OmniComp, the creator of FASER. The initial database setup includes standardized building and energy classifications, weather heating and cooling degree day data, and information about each agency's buildings, meters and meter accounts, and utility rates. Additionally, substantial electric use data for facilities served by Virginia Power and Appalachian Power between 1990 and 1993 have been electronically transferred to the appropriate agency databases. Agencies have been provided with these customized databases, asked to input monthly energy information for all utilities, and have begun submitting this information to DMME on a quarterly basis. With FASER, agencies now have a tool to help them target and upgrade energy-wasting buildings.

The Use of FASER Data

DMME currently receives quarterly FASER data submissions on computer disks from most participating agencies. This data is restored into agency-specific directories, with all prior data archived on backup tapes. By keeping nearly identical copies of each agency's FASER databases, DMME can perform agency-specific analyses of data, troubleshoot problem databases, and if necessary, provide FASER information back to an agency in the event of partial or complete data loss from their system. The data from individual agency databases can then be analyzed by DMME to determine energy consumption trends for all state facilities.

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Are We There Yet?

The Commonwealth has set a 25% energy savings goal to be reached by 1998 based on the FY 1990 base year. To date, estimates from FASER data indicate **base** energy use (i.e. core cooling loads, lighting, and computers, which accounts for 65% of total energy consumption) has decreased 15% since the FY90 base year. Energy consumption from heating and seasonal cooling (28% and 7% of the total consumption respectively) has increased somewhat.

The Department of Mines, Minerals and Energy appreciates your continued cooperation and thanks you for the effort you have put into this important program. Only with a renewed commitment to facility energy monitoring from **all** applicable agencies, will it be possible to accurately determine the results of current agency energy reduction initiatives, as well as discover new ways to reduce the cost of operating Virginia state facilities.❖

Setting the Standards

The basic **FASER** program comes with **Electricity** and **Office Building** as preset energy and building types. Additional energy and building types were later adopted as standards to be used by all agencies participating in the Energy Monitoring Program.

In order to allow DMME to merge individual agencies' FASER data to arrive at a statewide totaling, it is critical that there be uniformity in definitions of "fuel type" and "building type". For example, if one agency decides that fuel number "2" should be "**Coal**", then this agency's coal consumption will be compared with the rest of the state's **Natural Gas** consumption – the standard adopted for fuel number 2 (see Table 1). This same situation exists when choosing building types.

Therefore, please make sure the fuel and building

designations in the **SETUP** menu of your FASER database are exactly - **letter for letter** - as they appear in Tables 1 and 2 in this bulletin.

What is a Miscellaneous Building?

An analysis of FASER data shows an unusually high percentage of buildings classified as "Miscellaneous". In selecting a building type, consider the one function which consumes the majority of energy and select the building type which best describes that function. For example, if you have a building with space allocated for both office use and laboratory work, determine which use is consuming the majority of energy as a function of the total energy bill and select that building type. However, if a building is used for several different functions, with no single function making up a majority of the building's energy usage, "Miscellaneous" can be used. Most buildings **can** be classified more accurately than "Miscellaneous". **Table 2** outlines the various building standards used in the Energy Monitoring Program. Please make every attempt to accurately classify your buildings.❖

Quarterly FASER Reporting Reminder

To allow adequate time for agency FASER users to input each quarter's utility bills, the deadline for submission of data disks has been moved from the fifth day to the last day of the month, following each fiscal quarter. The new quarterly deadlines for submission of your FASER data disks are January 31, April 30, July 31, and October 31. Several agencies have found it easier to submit data disks monthly as soon as billing data is input. We will gladly accept monthly submissions! Please remember to run the **Process-Monthly** function from the FASER main menu before sending us your data disks! For assistance in using FASER, contact Frank Scribner at (804) 692-3234 or email: FFS@bsg1.mme1.state.va.us.❖

Other Information from the Division of Energy:

Agency Technical Assistance Grant Program

The Agency Technical Assistance Grant Program is currently being developed to provide agencies with the tools

| FUEL # | FUEL TYPE | FUEL UNITS | CONVERSION FACTOR |
|--------|-----------------|------------|-------------------|
| 1 | Electricity | kWh | 3.413 |
| 2 | Natural Gas | Therm | 100 |
| 3 | Fuel Oil #2 | Gal | 138.69 |
| 4 | Fuel Oil #4,5,6 | Gal | 149.69 |
| 5 | Propane | Gal | 95.5 |
| 6 | Coal | S-Ton | 24500 |
| 7 | Gasoline | Gal | 140 |
| 8 | Diesel | Gal | 135 |
| 9 | Wood (cord) | Cord | N/A |
| 10 | Wood (pellets) | Ton | N/A |
| 11 | Steam | Lbs | 1.39 |
| 12 | Manure | Lbs | N/A |
| 13 | Renewable | KBtu | 1.0 |
| 14 | Unmetered | Each | N/A |
| 15 | Trash | Ton | N/A |
| 16 | Water | Kgal | N/A |

Table 1 - FASER Fuel Standards

Table 2 - FASER Building Type Standards

| | | |
|--|---|--|
| 1. Office Building - used for administrative functions with typical work week schedules (7:00 a.m. - 6:00 p.m. Monday through Friday) i.e. conference rooms, private and open space offices, etc. | 6. Laundry - facility for functions such as washing, drying, dry cleaning, ironing, etc. | 13. Dormitory - group residential facility i.e. correctional facility, student dormitory, etc. |
| 2. Hospital Care - medical or supervised care facility, i.e. medical center, rehab center, examination and treatment center, patients rooms, etc. | 7. Laboratory - facility which provides space for experimentation and uses extensive outside air, i.e. greenhouse, medical lab, etc. | 14. Parking Fac - garages, decks, and lots. |
| 3. Classroom/Training - space used for instructional purposes that may have irregular operating hours, i.e. lecture rooms, shops, laboratories, etc. | 8. Power Plant - facility which provides for generation, conversion, and distribution of heat, electricity, or cooling. | 15. Tunnel - underground and underwater vehicle passage |
| 4. Exterior Lighting - all lighting that is exterior to buildings and excludes stadium lighting, i.e. roadway lighting, pathway lighting, outdoor area lighting, building security lighting, etc. | 9. Library - facility which provides space for reading, studying, media storage, i.e. museums, libraries, etc. | 16. Retail Store - ABC Stores, bookstores, etc. |
| 5. Recreational Fac - facilities such as stadiums, gymnasium, swimming pools, tennis courts, rest areas, state park areas, etc. | 10. Food Prep & Serve - kitchens, dining areas, cafeterias, etc. | 17. Information Center - i.e. computer center, radio station, etc. |
| | 11. Maintenance Fac - vehicle shops, construction and trade shops, etc. | 18. Misc - only if you cannot assign a square footage to an energy consuming facility and it does not fit any other category but consumes considerable energy should you assign this building type to it, i.e. drawbridges, incinerators, toll booths, etc. |
| | 12. Warehouse - storage area which requires little heat or cooling. | 19-20 User Defined - if a building cannot be fit into these categories, and you still wish to track the building, you can create a category of your own. |

to make informed decisions about ways to maximize energy efficiency in state facilities while reducing annual operating costs. The program will offer assistance to agencies on two levels. The first part provides grants for hiring energy professionals to evaluate a building's energy using systems and to make recommendations on energy saving opportunities which can improve the efficiency of facility operations. The second part will be devoted to funding the engineering and design phase of the energy improvements selected for implementation. This grant program is scheduled to become available in the spring of 1997. For more information, contact Robin Jones at (804) 692-3224 or email: crj@bsg1.mme1.state.va.us.

Agencies Awarded Lighting Grants

Eighteen agencies have been awarded grant funds under the **State Agency Lighting Upgrade Program**. This program facilitates cost-effective lighting efficiency upgrades in state facilities. Agencies were encouraged to use in-house expertise to conduct simple lighting surveys and to perform the lighting upgrades. Emphasis was placed on upgrades which typically provide a high return on investment. Examples of these high return lighting upgrades include replacement of incandescent fixtures with high efficiency fluorescent, and retrofitting incandescent exit signs with LED (light emitting diode) conversions.

Grant awards ranged from \$16,000 to a maximum of \$50,000 per agency. A total of \$740,042 in grant funds was awarded, with agencies providing a total of \$306,777 in

matching funds. The total cost for all lighting upgrades is \$1,046,819. The annual savings from these lighting upgrades is estimated to be \$271,267 and will have a combined simple payback of 3.9 years. For more information on this program, contact Kendra Shifflett at (804) 692-3230 or email: kbs@bsg1.mme1.state.va.us.

Virginia Energy Leasing Program Information

DMME is actively seeking proposals for energy efficiency improvements to state facilities, which can use the Virginia Energy Leasing Program (VELP) for financing. The VELP provides this financing to fund a wide range of energy efficiency projects, including the services and equipment required to develop, design, and install the project. Energy projects valued at \$50,000 or more can include lighting or motor upgrades, boiler replacements, energy management control systems, etc. Lease funds can be repaid over time from operating budgets or from energy savings resulting from the projects. For more information on the VELP, contact Robin Jones at (804) 692-3224 or email: crj@bsg1.mme1.state.va.us.

DMME Offers New Solar Program for Agencies

DMME is offering a new service entitled **Park Power: Using Solar Energy for Public Spaces**. The program is designed to bring solar energy technology "down to earth" in Virginia's state parks and recreation areas. Through this program, DMME can provide technical assistance in iden-

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tifying cost-effective solar applications, selecting and purchasing solar power systems, and understanding system design issues and procurement procedures for installation and maintenance.

Although Park Power is targeted primarily for government parks and recreation areas, the program may also be of interest to other state agencies which have similar power needs, especially those that are small to medium in size and are remotely located or difficult to serve with power lines or diesel generators.

A wide variety of solar energy systems capable of meeting many energy needs are cost-effective and commercially available today. There are currently over 600 solar energy systems in use within the National Parks System, including the north and southeast. Solar power is being tapped for many uses including lighting parking lots, visitor centers, and welcome signs, heating water for washing, facilitating composting and better ventilation in comfort stations, aerating lakes and ponds to improve wildlife habitat, providing irrigation for shade trees, and broad-

casting information. In Virginia, solar energy is being used to broadcast part of an audio auto tour of Robert E. Lee's Last Retreat. It is also being used to power water quality monitoring stations in Virginia's forests.

For information on Virginia's Park Power program, contact Susan Thomas at (804) 692-3226 or email: smt@bsg1.mme1.state.va.us.

Solar Assistance for State Agencies

The Department of Mines, Minerals and Energy is interested in assisting agencies in utilizing solar energy technology. DMME can provide information and training on using solar, and can assist agencies in identifying possible applications, system sizing, design, and economic considerations, identifying qualified vendors and installers, and operating and maintaining solar systems.

For information, contact Susan Thomas at (804) 692-3226 or email: smt@bsg1.mme1.state.va.us. ❖



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